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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,603	09/25/2003	Fumiyuki Nishiyama	Q77490	1317
23373	7590	06/13/2005	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			SASTRI, SATYA B	
			ART UNIT	PAPER NUMBER
			1713	

DATE MAILED: 06/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/669,603

Applicant(s)

NISHIYAMA ET AL.

Examiner

Satya B. Sastri

Art Unit

1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6, 8-11 and 13 is/are rejected.
- 7) ☒ Claim(s) 5, 7, 12 and 14 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/25/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

1. This office action is in response to application filed on September 25, 2003. *Claims 1-14* are now pending in the application.

### *Claim Objection*

2. *Claim 1* is objected to for the use of "atom group" to describe Z in the formula (Ia). It is unclear if it Z is a group of atoms.

Appropriate correction is required.

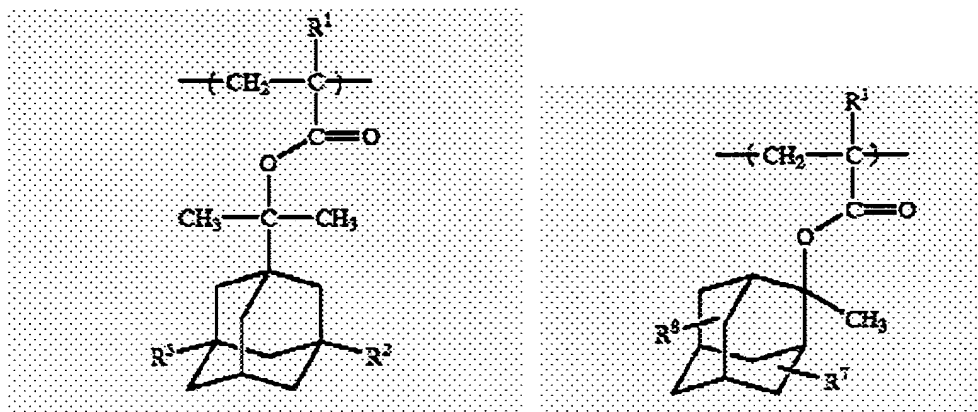
### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. *Claims 1-4, 6, 8-11, 13* are rejected under 35 U.S.C. 103(a) as being unpatentable over Ushirogouchi et al. (US 6,440,636 B1) in view of Kodama (US 6,733,951 B2).

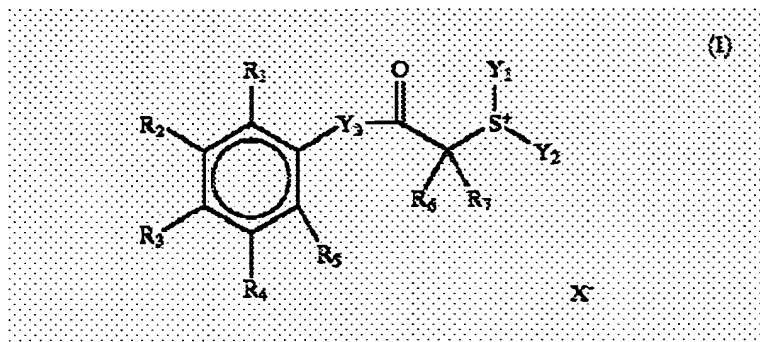
The prior art to Ushirogouchi et al. discloses photoresist compositions comprising polymers with the following monomeric units (Ia and Ib):



where in  $\text{R}_1$  is a hydrogen or methyl group,  $\text{R}_2$ ,  $\text{R}_3$ ,  $\text{R}_7$  and  $\text{R}_8$  may be hydrogen atoms or hydroxyl groups (abstract). Additionally, the monomeric units (Ia) and (Ib) may be from 50-100% by weight of the polymeric compound (column 6, lines 50-59). The compositions may be applied on substrate surface, irradiated, baked and then developed with alkaline aqueous solutions (column 67, lines 10-35).

The difference between the prior art and the present invention is the specific use of photoacid generators based on sulfonium compounds with conjugated unsaturation or benzoyl group containing sulfonium compounds.

The primary reference is open to use of known or conventional photoacid generators in the composition (column 20, lines 1-16). The secondary reference to Kodama is in an analogous field of photoresist compositions comprising acid generating compounds of the formula (I)



wherein R1-R5 may be hydrogen or an alkyl group or an alkoxy group, R6 and R7 may be hydrogen or an alkyl group (abstract). The prior art discloses that the positive radiation-sensitive compositions comprising a compound (1) as the acid generating compound and a resin having a group capable of decomposing by the action of acid show high sensitivity and high resolution in pattern formation by irradiation (column 2, lines 35-50). Given that the primary reference discloses photoresist compositions comprising resins with good alkali solubility (column 2, lines 1-6), it would have been obvious to one of ordinary skill in the art at the time the invention was made to include acid generators taught by Kodama in the resist compositions of Ushirogouchi et al. and thereby obtain the instant invention.

With regard to *claims 3, 4, 10 and 11*, Kodama discloses the use of basic organic compounds and fluorine or silicon-containing surfactants in the compositions (column 63, 64).

### *Allowable Subject Matter*

5. *Claims 5, 7, 12 and 14* are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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The following is a statement of reasons for the indication of allowable subject matter:

Instant claims are directed to a resist composition comprising a specific acid generator based on sulfonium compounds with conjugated unsaturation. Such modifications are not disclosed in the prior art.

***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satya Sastri at (571) 272 1112.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached at (571) 272 1114.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
SATYA SASTRI

June 7, 2005

**TATYANA ZALUKAEVA**  
**PRIMARY EXAMINER**

